

REMARKS

In the December 23, 2003 Office Action, the Examiner rejected claims 1, 5, 21, 22, and 25–28 under 35 U.S.C. § 103(a) as being unpatentable over Japanese KOKAI publication number 3-13576 (“*Isaka*”). Applicants have canceled claims 22 and 25–28 by this Amendment without prejudice or disclaimer of the subject matter contained therein, thereby rendering the rejection of those claims moot. Because the Examiner fails to make a *prima facie* obviousness case against claims 1, 5, and 21, Applicants traverse the rejection of these claims.

Formal Drawings

Applicants respectfully request review of the formal drawings submitted as part of the application filed April 27, 2002. The Office Action dated January 16, 2002 (Paper No. 6) included an attachment indicating the drawings have not been reviewed because, “The drawings submitted with this application were declared informal by the applicant.” However, the record contains no such declaration. The cover sheet filed with the original application clearly indicates under item number 3: “Drawings - 5 sheets of formal drawings containing 12 figures.” **To date, there has been no indication that the Formal Drawings have been reviewed by the Examiner.** Review of the formal drawings is requested.

Amendments

Applicants have amended claims 1, 5, and 21 as indicated in the listing of the claims to more appropriately define the invention. Applicants have canceled claims 22 and 25–28 without prejudice or disclaimer of the subject matter contained therein. And

Applicants have added new claims 29–37 to protect additional aspects of their invention.

Rejection under § 103(a)

To establish a *prima facie* case of obviousness under §103(a), each of three requirements must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine references or modify a reference. (MPEP § 2143 (8th ed. Rev. Feb. 2003).) Second, there must be a reasonable expectation of success. (*Id.*) Moreover, both of these requirements must “be found in the prior art, and not based on applicant’s disclosure.” (*Id.*) Third, the reference or references, taken alone or in combination, must disclose or suggest every element recited in the claims. (MPEP §2143.03.)

In the Office Action, the Examiner acknowledges that *Isaka* fails to disclose, “heating an ion source material composed of indium iodide (InI) and *having a particle size larger than 1 mm and not larger than 5 mm*,” (emphasis added) as recited in claim 1. Yet the Examiner alleges, without factual support, that these are obvious variations in design and, further, identifies no motivation to modify *Isaka* or expectation of success. In other words, the Examiner has not provided any of the three requirements for a *prima facie* showing of obviousness.

A particle may range “in diameter from a few angstroms (as with gas molecules) to a few millimeters (as with large raindrops),”¹ and *Isaka* at best discloses “granular

¹ MCGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS 1375 (4th ed. 1989).

indium iodide.” (*Isaka*, abstract, translation at 4.) This would in no way lead one to heat “an ion source material composed of indium iodide (InI) and *having a particle size larger than 1 mm and not larger than 5 mm*,” (emphasis added) as recited in claim 1. The Examiner must provide a suggestion or motivation to modify *Isaka*, must identify a reasonable expectation of success, and must cite references that alone or in combination disclose or suggest every element recited in the claim. Since the rejection lacks each of these criteria, Applicants submit claim 1 should be allowed. Applicants further submit that claim 21 and new claims 29 and 30 are likewise allowable at least because of their respective dependence from allowable claim 1.

Claim 5, while of different scope, contains recitations similar to those of claim 1, and recites, *inter alia*, “heating an ion source material composed of indium iodide (InI) and having a particle size larger than 1 mm and not larger than 5 mm to generate a vapor of said indium iodide (InI).” Since *Isaka* fails to disclose or suggest at least “heating an ion source material composed of indium iodide (InI) and having a particle size larger than 1 mm and not larger than 5 mm,” as recited claim 1, it likewise fails to disclose or suggest that language with respect to claim 5. Applicants submit that claim 5 is allowable at least for the reasons given with respect to claim 1.

Claim 31 recites, *inter alia*, “heating an ion source material composed of indium iodide (InI) which is supplied in an oven having a vapor outlet nozzle *and whose particle size is larger than a diameter of said outlet nozzle*” (emphasis added). *Isaka*, by contrast, discloses a particle size of indium iodide 3 *smaller* than the diameter of the outlet of vessel 4. (See *Isaka*, Figure 1.) Consequently, *Isaka* teaches away from a “particle size [being] larger than a diameter of said outlet nozzle,” as recited in claim 31.

Isaka fails to teach or suggest each claim element recited in claim 31, fails provide any expectation of success, and fails to provide any motivation to modify itself. Applicants therefore submit claim 31 is allowable over *Isaka* and request its timely allowance. Applicants further submit that claims 32 and 33 are likewise allowable at least because of their respective dependence from allowable claim 31.

Claim 34, while of different scope, includes recitations similar to those of claim 31, and recites, *inter alia*, "heating an ion source material composed of indium iodide (InI) which is supplied in an oven having a vapor outlet nozzle and whose particle size is larger than a diameter of said outlet nozzle." For at least the reasons given with respect to claim 31, Applicants submit claim 34 is allowable and request its timely allowance.

Claim 35 recites, *inter alia*, "generating indium (In) ions by discharging said vapor in an arc chamber in which *a support gas inlet to said arc chamber and a vapor inlet to said arc chamber are provided on one face of the arc chamber*, and are configured to introduce support gas and said vapor generated into said chamber" (emphasis added). *Isaka*, by contrast, discloses a cylinder 1, which introduces gasified indium iodide a into discharge chamber 5 perpendicular to a filament 51. An inert gas is also introduced into discharge chamber 5 through inlet 54, through the chamber wall adjacent and perpendicular to the wall through which gasified indium iodide a is introduced. This is not the same as "an arc chamber in which a support gas inlet to said arc chamber and a vapor inlet to said arc chamber are provided on one face of the arc chamber, and are configured to introduce support gas and said vapor generated into said chamber," as recited in claim 35. Moreover, there is nothing in *Isaka* that would motivate one to modify *Isaka*. In addition, Applicants note that introducing the support gas and the ion

source gas from the same direction may improve the likelihood that that the ion source gas is activated by plasma. *Isaka* fails to teach or suggest any similar aspect.

Absent a disclosure or suggestion of each element recited in claim 35, an expectation of success, and motivation to modify the reference, *Isaka* fails to render claim 35 obvious. Applicants therefore submit claim 35 is allowable and request its timely allowance. Applicants further submit that claim 36 is likewise allowable at least because of their respective dependence from allowable claim 35.

Claim 37, while of different scope, includes recitations similar to those of claim 35, and recites, *inter alia*, “generating indium (In) ions by discharging said vapor in an arc chamber in which a support gas inlet to said arc chamber and a vapor inlet to said arc chamber are provided on one face of the arc chamber, and are configured to introduce support gas and said vapor generated into said chamber.” For at least the reasons given with respect to allowable claim 35, Applicants submit claim 37 is allowable and request its timely allowance.

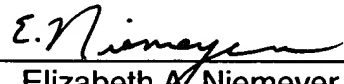
In view of the foregoing, Applicants respectfully request reconsideration of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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By: 
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